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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Nicholas James Parkinson

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06/16/2010

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EXAMINER

LE, QUANG V

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,349	Applicant(s) PARKINSON ET AL.	
	Examiner QUANG V. LE	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to a Notice of Panel Decision from a Pre-Appeal Brief review on 4/9/2010.
2. **Claims 1-11 and 13-14** have been examined and are pending. This action is made **Non Final**.

Response to Arguments

3. Applicant's arguments see pages 1-5, filed 3/30/2010, with respect to the rejections of claims 1-11 and 13-14 under 103(a) have been fully considered and are partially persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1, 3, 7-9 and 13-14** are rejected under 35 U.S.C. 102(b) as being unpatentable Hardin et al, US 5,642,299.

As per claim 1, Hardin teaches an image processing system including a plurality of linear arrays of detectors imaged onto a scene of interest and an image store for

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receiving signals from the linear array when a detected object passes through the scene (col 1, lines 60-67 to col 2, lines 1-16). *A camera is a linear arrays of detectors.*

Harding's system includes a pair (two) of video camera, which means Harding system includes a plurality (two) of linear arrays of detector (camera) as cited in the claim.

Wherein the plurality of linear arrays of detectors (cameras) are spaced substantially parallel to one another to image a plurality of areas of interest in a scene (figure 4a and col 6, lines 1-20).

The system further comprises a signal processor for detecting images received by the plurality of arrays and determining direction and speed of movement detected (col 12, lines 46-65). *Although, not explicitly disclosed how the system detects the direction of the movement, it is inherent that the direction of the movement should falls out from the calculation of speed (Col 12, lines 59-65, "if the algebraic sign of the slope is positive, the target is receding, if negative, the target is approaching").*

Regarding claim 3, Hardin teaches the system of claim 1, Hardin further teaches wherein the detectors are visible light sensitive detectors (col 4, lines 61-65)

Regarding claim 7, Hardin teaches the system of claim 1, Hardin further teaches wherein each detector array has its output read out sequentially from each detector element (figure 9a step 94).

Regarding claim 8, Hardin teaches the system of claim 1, Hardin further teaches wherein the processor is arranged to detected object speed (col 1, lines 60-67 to col 2, lines 1-16).

Regarding claim 9, Hardin the system of claim 1, Hardin further teaches the system including an additional two-dimensional detector array system which may be switched on when an object is detected (col 2, lines 49-62).

Regarding claim 13, Hardin the system of claim 1, Hardin further teaches wherein the linear arrays of detectors are arranged to image the detected object sequentially in said plurality of area of interest as said detected object passed through the scene (col 1, line 60-67 to col 2, lines 1-16). *Hardin teaches "a timer causes both camera lenses to capture a first target image in the field of view of each lens at time T1 and also at a later time T2..) implies that the object is detected sequentially in the plurality of interest as cited in the claim.*

Regarding claim 14, Hardin the system of claim 1, Hardin further teaches wherein the linear arrays of detectors are disposed such that as the object passes through the scene a component of movement thereof is substantially orthogonal to an alignment direction of said arrays (col 3, lines 4-19; col 10, line 20-31). *Hardin teaches "however, if desired, the light sensitive element may be oriented so that the line scan*

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direction is perpendicular to the baseline. This is similar to the orthogonal to an alignment direction of the arrays as cited in the claim.

5. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardin as applied to claim 1 above, further in view of Douglas Burgess, UK Patent Application, GB 2154388.

Regarding claim 2, Hardin teaches the system of claim 1, Harding does not teaches the detectors are infra red detectors.

However, Burgess teaches an image processing system that use single linear array sensors to detect a presence of a vehicle in the scene that uses infra red detector (col 1, lines 51-52).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate the infra red detector as taught by Burgess into Hardin speed detection system in order to enhance the detection of the system (Burgess: col 1, lines 55-56)

Regarding claim 4, Hardin teaches the system of claim 1, Harding does not teach wherein the detectors are mm wave detectors.

However, Burgess teaches an image processing system that use single linear array sensors to detect a presence of a vehicle in the scene that uses small wavelength radar detector (Col 1, lines 57-59).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate the small wavelength detector as taught by Burgess into Hardin speed detection system in order to enhance the detection of the system (Burgess: col 1, lines 55-56).

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hardin as applied to claim 1 above, further in view of Vock et al., US Patent 5,798,519.

Regarding claim 5, Hardin teaches the system of claim 1, although Hardin teaches a method of measuring speed of a target/object using two digital cameras, Hardin does not explicitly disclose wherein each detector element in each linear array (of the camera) has associated therewith an independent noise limiting means (col 10, line 29-39).

However, Vock teaches a method of using camera to measure the speed of a golf ball. Vock further teaches a noise limiting mean by identifying and masking out the defective pixels with high noise level (col 17, lines 66-67 to col 18, lines 1-13).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate noise limiting capability into Hardin image processing

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system to produce a target/object detection system that is not susceptible to background noises (Vock: col 18, lines 33-44).

Regarding claim 6, Hardin in view of Vock teaches the system of claim 5, Vock further teaches wherein the noise limiting means at each detector element comprises an independent amplifier (col 17, line 26-45) and filter (col 18, line 22-44).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hardin as applied to claim 1 above, further in view of Zhdanov, US Patent No. 6,633,256.

Regarding claim 10, Hardin teaches the system of claim 1, but Harding fails to teach wherein several systems are combined into a single unit arranged to give about 360 degree of azimuth coverage.

However, in an analogous art, Zhdanov teaches a method measuring coordinates of a target using two axis sensors that can cover a full 360 degree of azimuth angle (col 22, line 24-38).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate Zhdanov's 360 degree of azimuth sensor method into Hardin image processing system so as to provide an object detection system that can detect 360 degree continuously without moving or reconfiguring the equipment.

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Such system would benefit the threat detection system where continuous 360 degree of coverage is critical.

8. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hardin as applied to claim 1 above, further in view of Martin, US Patent No. 6,243,131.

Regarding claim 11, Hardin teaches the system of claim 1, but Harding fails to teach wherein outputs from the signal processor are communicated to remote monitoring stations.

However, in an analogous art, Martin teaches a method of using an array of sensor to capture an image of an object, and then send it to display on remote stations (col 6, line 34-37).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to incorporate Martin method of communicating with remote stations into Hardin image processing system so as to provide a network of detection system that can communicate and share detection information. Such system will benefit large scale surveillance system.

Examiner's Note

The Examiner cites particular figures, paragraphs, columns and line numbers in the reference(s), as applied to the claims above. Although the particular citations are representative teachings and are applied to specific limitations within the claims, other passages, internally cited references, and figures may also apply. In preparing a

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response, it is respectfully requested that the Applicant fully consider the references, in their entirety, as potentially disclosing or teaching all or part of the claimed invention, as well as fully consider the context of the passage as taught by the reference(s) or as disclosed by the Examiner.

Conclusion

9. The prior arts made of record and not relied upon are considered pertinent to applicant's disclosure:

Olszak, Artur G. (US 20040223199 A1) Holographic single axis illumination for multi-axis imaging system

Neumann, Gad (US 20030133604 A1) Method and system for fast on-line electro-optical detection of wafer defects

Mathews, Bruce Albert et al. (US 20020149674 A1) Electro-optical reconnaissance system with forward motion compensation

Hanson; Steen et al. (US 7209291 B2) Optical displacement sensor

Yoshimura; Kazunari et al. (US 5416591 A) Method of determination of a three-dimensional profile of an object

Watkins; Robert A. (US 4193688 A) Optical scanning system

Park, Michael C. et al. (US 20020180759 A1) Camera system with both a wide angle view and a high resolution view

Krasutsky; Nicholas (US 7336345 B2) LADAR system with SAL follower

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang V. Le whose telephone number is (571) 270-

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5014. The examiner can normally be reached on Monday through Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor David Ometz can be reached on (571)272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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